

Name: \_\_\_\_\_

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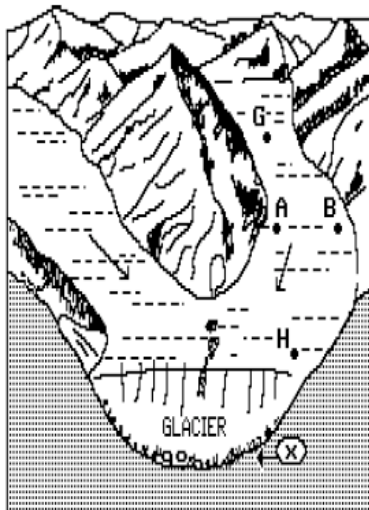
## Surface Processes

The Physical Setting: Earth Science

# Worksheet: Glaciers

Questions 1 through 2 refer to the following:

The diagram below represents two branches of a valley glacier. Points A, B, G, and H are located on the surface of the glacier. Point X is located at the interface between the ice and the bedrock. The arrows indicate the general direction of ice movement.



1. Which type of weathering most likely is dominant in the area represented by the diagram?
  - a. acid reactions
  - b. chemical reactions
  - c. biologic activity
  - d. frost action
2. Which force is primarily responsible for the movement of the glacier?
  - a. gravity
  - b. running water
  - c. ground water
  - d. wind
3. For which movement of earth materials is gravity not the main force?
  - a. snow tumbling in an avalanche
  - b. moisture evaporating from an ocean
  - c. boulders carried by a glacier
  - d. sediments flowing in a river
4. Which characteristic of a transported rock would be most helpful in determining its agent of erosion?
  - a. age
  - b. physical appearance
  - c. density
  - d. composition

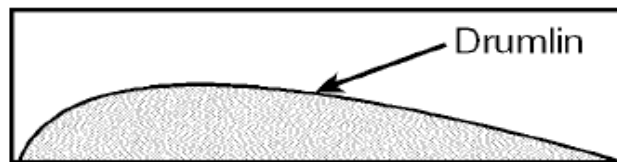
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# Worksheet: Glaciers

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5. Which geologic evidence would best support the inference that a continental ice sheet once covered a given location?
- polished and smooth pebbles; meandering rivers; V-shaped valleys
  - scratched and polished bedrock; unsorted gravel deposits; transported boulders
  - sand and silt beaches; giant swamps; marine fossils found on mountaintops
  - basaltic bedrock; folded, faulted, and tilted rock structures; lava flows
6. Which erosional agent typically deposits hills of unsorted sediments?
- ocean waves
  - glaciers
  - winds
  - streams
7. A large, scratched boulder is found in a mixture of unsorted, smaller sediments forming a hill in central New York State. Which agent of erosion most likely transported and then deposited this boulder?
- ocean waves
  - running water
  - a glacier
  - wind
8. The direction of movement of a glacier is best indicated by the
- elevation of erratics
  - alignment of grooves in bedrock
  - size of kettle lakes
  - amount of deposited sediments

The diagram below represents a profile of a drumlin that was deposited by a glacier in central New York.



9. This hill is most likely composed of
- cemented sediments
  - unsorted sediments
  - horizontally layered sediments
  - vertically layered sediments
10. A low hill is composed of unsorted sediments that have mixed grain sizes. This hill was probably deposited by
- the wind
  - wave action
  - running water
  - a glacier